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ABSTRACT

Midway through this century, Braille was placed within the reach of blind persons throughout the world when Unesco began the major task of adapting Braille to accommodate all languages and dialects. Invented in France between 1825 and 1829, Braille's role as the key to the cultural emancipation of the blind had previously been limited to countries using the Roman alphabet. Although a Braille alphabet now exists for most of the languages and dialects in the world, the majority of blind people cannot use it because they live in developing countries and are too poor, lack medical attention, are malnourished, or have social disorders. About 40 million (80 percent) blind people live in the developing countries. In many African and Asian countries, the education of blind children is neither free or obligatory. Barely 5 percent of blind African children receive any kind of education, and the situation is similar in India. As with their sighted sisters, blind women have less opportunity than males to receive education. Once young people learn to read Braille, they need to be provided with reading materials. Virtually all industrialized countries now have computerized Braille reproduction systems. Illiteracy among blind persons is avoidable. (CML)

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LITERACY LESSONS

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INTERNATIONAL LITERACY YEAR

Braille: the key to the emancipation of the blind

by Enrique Elissalde

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INTERNATIONAL BUREAU OF EDUCATION

Halfway through this century Braille was placed within the reach of blind persons throughout the world. Sponsored by Unesco, and under the direction of Sir Clutha Mackenzie, the major task of adapting Braille to accommodate all languages and dialects had been undertaken.

Invented in France between 1825 and 1829, Braille became the key to the cultural emancipation of the blind in countries using the Roman alphabet. However, its benefit was restricted because millions of blind persons living in the Arab countries, in China, India and elsewhere did not have access to this asset: the Braille alphabet was not originally adapted to the written form of these languages and, more particularly, their dialects. After the Second World War, work started on overcoming this obstacle, and Braille began to be studied by experts from different geographical regions and by specialists on written communication.

As a result of these efforts, Braille has come within reach of the hands of millions of blind people all over the world.

The right to an education and to literacy in their mother tongue then became an achievement possible for all those who could read with their fingertips.

Blind persons first began to receive systematic education in the eighteenth century. This occurred in France at a time when the country was in turmoil over the ideas that served as a prelude to the Revolution of 1789. In that special atmosphere, when a wave of new concepts began to spread throughout Europe, Diderot published his 'Charter on the blind' in 1749, and the researcher Condillac completed his 'Treatise on the sensations' in 1754. Concern for the education of the deaf arose at about the same time (Abbot L'Epé founded his first school in 1750), while Valentin Haüy created the first school for the blind in Paris in 1784.

According to Haüy's system, the sense of touch replaced the eyes in the act of reading. He used normal Roman alphabet lettres printed in relief so that the outline could be recognized by the fingertips. This technique is, of course, still within the reach of anyone today – blind or not. But in order to be able to recognize a letter, it must be printed in a considerable size and, even so, its recognition is a slow process. It is not perceived at once in the way the human eye sees a letter. Through the sense of touch, each part of the letter must be identified separately and a mental image of the whole built up. Even though the blind people in Haüy's school learned to read, it was a slow process and the books were extremely cumbersome (some weighing as much as fifteen kilogrammes).

Another serious drawback in using the regular Roman alphabet printed in relief was that the blind could still not write these characters themselves. The door to culture was only partially open, since it was only possible to read the characters prepared by Haüy, and preparing these materials was a lengthy and laborious process.

However, in 1825, at the same Parisian institute founded by Haüy in 1784, a young blind man named Louis Braille presented a system of reading based on raised dots.

The young inventor was barely 16 years old. He had entered the institute in 1819, since which time he had been living in Paris. He came originally from Coupray, a small town located 35 kilometres outside the city: today, his former home is the Louis Braille Museum. Young Louis proved to be an exceptional student and a remarkable teacher. Concerned about communication between blind people and the rest of the community, he set about creating a system of reading and writing. He substituted the raised dot for the letter printed in relief, and developed a system of six dots arranged like the number six on a domino. The presence or absence of these six dots gave sixty-four different combinations. In this way symbols made of raised dots could be formed which represented all the letters in the alphabet, as well as punctuation marks, numbers and conventions necessary for writing.

Louis Braille did not invent a language, but rather an alphabet. He assigned letters, punctuation marks and numbers to different combinations of dots. Using this system, the printed word could be transcribed for tactile reading. Any text could be reproduced – a poem, a novel, a textbook, a newspaper – letter by letter, symbol by symbol.

Compared to a Roman letter printed in relief, the Braille letter of raised dots is easier to be grasped in its totality. Because of its reduced size, and because of the way each raised point 'strikes' the nerve endings of the fingertips, the symbol is perceived at once. For example, a letter formed by four dots is recognized as a group and not as four isolated points. The dots are not autonomous; they are part of a system and that system leads to letters which are grasped in their entirety. The finger does not decipher, it reads. This does not mean knowing how many dots each letter has and counting them. It means allowing the dots of the letter to stimulate the fingertips and thus to transmit through the nerve endings the shapes of letters, punctuation marks, numbers, and even musical notes, a scientific equation or a computer programme, since the Braille system has been adapted to all these purposes.

The simultaneous perception of all the dots forming a letter leads to quick and easy reading. The dots are printed on paper and are read by the fingers which glide softly over the page in the same way that the eyes glide over printed text. Like a visual image, the Braille letter forms an impression on the reader's brain.

Because of young Louis Braille's invention, the barriers obstructing the cultural emancipation of the blind were removed. The educational process started by Haüy rapidly spread throughout Europe, and Braille came to represent an amazingly powerful tool: a system of reading and writing that satisfied the possibilities and demands of the sense of touch.

BRAILLE CATCHES ON

At first, widespread teaching of Braille encountered resistance. Many educators of the blind resisted it on the grounds that, as it was based on conventional signs and not on the regular alphabet, the blind could easily find themselves isolated from sighted persons. They felt that the system of tracing the letters of the alphabet in relief should be pursued so that texts could be read by both sighted and blind persons.

Nevertheless, blind people found that Braille was the right solution for them. It was the blind students at the Paris institute who finally imposed the Braille system, in spite of resistance from the authorities and some teachers.

Little by little Braille began to gain ground and spread to other European countries. The year 1854 was decisive for the expansion of the Braille system outside France. This was the year that the system crossed the Atlantic and reached Brazil. As far as the dissemination of Braille throughout the world is concerned, a process was initiated then that has never ceased.

FINGERS THAT COULD READ, BUT DON'T

Socio-economic causes, and not difficulties with the Braille system, have meant that today there are several million blind people who do not have access to reading and writing. This situation is particularly dramatic in the Third World, where 80% of the 50 million blind persons live.

Being blind is not an obstacle to reading and writing. The blind person can easily learn to read using fingertips instead of eyes. In fact, there are numerous Braille production centres both in developed countries and in the more industrialized nations of the Third World. Moreover, thousands and thousands of books and magazines printed in Braille are in circulation all over the world. If children, young people and adults were taught to read the Braille system, they could achieve the same results as those who read with their eyes.

Brazil was the first Latin American nation to show concern about the educational plight of the blind. The first attempt dates from 1835, when Ferreira Franca proposed a law that would have set up educational centres for the deaf and the bind. But this project failed and it was necessary to await the return of José Alvarez de Acevedo from Paris, where he had been attending the institute for the blind founded by Haüy. Upon his return, and with the help of the court physician, Xavier Sigaud, Acedevo was able to persuade Emperor Pedro II to found, on 12 December 1854, the Imperial Institute for Blind Children (know today as the Instituto Benjamín Constant) in Rio de Janeiro. For this purpose, Braille alphabets, pocket writing frames, styluses, calculation tables, Braille books in Portuguese and even a rudimentary printing press for Braille characters were created.

Via the main sea ports of South America, Buenos Aires and Rio de Janeiro, Braille thereafter continued its spread. It quickly reached the centre of the continent and, within fifty years, existed everywhere in Latin America.

Also in the late nineteenth century, Braille reached the Asian continent. In order for their converts to read the Bible, Christian missionaries introduced the Braille reading system to blind persons, although only in some towns and only in English, that is to say not in the national language or local dialect.

In India, for example, Braille was already being taught in both the south and the north of the country before 1890. In 1887, the missionary Anni Sharp created the school in Amritsar that bears her name. Without knowing about the school in Amritsar, in 1890

Anne Askwith founded another school for the blind in the very south of the country, at Palayamkottai.

The method exists, but not the economic resources necessary, to provide adequate reading and writing materials in Braille to all who would use them, in particular to the Third World. A Braille alphabet now exists for most of the languages and dialects used by the citizens of the world, but the majority of blind people have not received – and still do not receive – any particular incentive from their community and family to use the system. Many young people and adults who are already literate in Braille cannot find the reading materials they need because Braille production is costly, and books, magazines and brochures are not available in sufficent quantities.

Furthermore, in spite of the great potential opened up by Braille, the vast majority of blind persons have not been able to take advantage of it, either because they live in remote rural areas, or because they are swept up in the squalor of large urban slums where poverty, lack of medical attention, malnutrition and social disorder all serve to paralyse their emancipation. They are thrown in with the 900 million other illiterates who share their fate.

Photo: Unesco

The blind in developing countries do know how to read and write using Braille, although to a considerably lesser degree than those in developed countries. However, despite the fact that the fingers of blind persons living in the Third World have the same ability to learn Braille and benefit from it, they have far fewer opportunities to do so because not enough material is produced for them. It is estimated that it would cost US $2 to produce a fifty-page book in Braille. If we assume that there are approximately 42 million blind people living in the Third World, it would take US $84 million to provide a book for each of them – an amount far less than that paid regularly by these countries to service the interest on their foreign debt.

Since they are a minority group, the blind are unable to influence the outcome of elections; since they are often disregarded as far as their ability to work is concerned, they are not considered a part of the work force for industry. In sharp contrast to this neglect of the blind is the fact that the majority of developing countries spend approximately 40% of their national budget on military purposes. This can be interpreted as an incentive for 'manufacturing' more blind people, because wars (which are nowadays largely confined to Third World countries), as well as creating famine and misery, lead to physical handicaps, one of which is blindness.

Compared to the large amounts devoted to military spending, the 12% or 15% that is directed to health and education pales into insignificance. The difference between these two extremes becomes all the more apparent when we note that it is in the Third World that 90% of illiterates live – among whom are the blind. And this

is not because the blind are intellectually incapable of learning Braille, but rather because they live in a context that does not consider them as human beings.

In a large number of Asian and African countries the education of blind children is neither free nor obligatory. Furthermore, in vast regions of Africa not a single school is provided for the blind, while the schools that do exist must cater for a very large region.

It is estimated that in Africa today barely 5% of blind children receive any kind of education. In India a similar estimate puts this figure at between 5 and 7%.

THE AGES OF READERS

The majority of readers in the Third World are children and young people. For example, according to a study made in 1985 by the Braille Foundation of Uruguay (BFU) on the distribution of its publications in nineteen Spanish-speaking countries, almost 50% of readers were between 15 and 20 years of age. In the industrialized countries, on the contrary, around 70% of readers of Braille were over 65 years old.

Proportionally, there is a greater number of readers among congenitally blind persons. In the case of acquired blindness, numerous factors contribute to the lower proportion of readers. Health problems, such as diabetes, may make it difficult for blind persons to learn to use Braille owing to a decline in their faculties, particularly in their sense of touch. Certain types of manual labour carried out by persons who later lose their sight can make it difficult to learn Braille owing to the deterioration of their hands. One must also consider the case of those adults who never learned to read and later lost their sight. It is unlikely that they would begin learning to read now that they are blind.

Like their sighted colleagues, blind women have less opportunity to receive education. In Latin America, where the female participation in education, labour and other areas is the highest in the world, blind women and children represent only 40% of the registered blind population. These proportions are reflected in the number of blind women who are literate and who read on a regular basis.

In the BFU survey mentioned above concerning Spanish-speaking countries in Latin America, it should be noted that 54% of the readers are male and 46% female. Between 1985 and 1987 this proportion did not change, although the total number of readers in the region increased by 17%. As the population ages, the proportion of female readers declines: they represent 45% of the population under 14 years of age, 39% in the 15 to 30 age group, while between the ages of 41 and 60 this number drops to 34%. These data are based on an analysis of the readership of the publications *Entre-todos* (Among all of us), *Horizontes* (Horizons) and *Cuadernos horizontes* (Horizons notebook).

Without a doubt, blind women suffer from three types of discrimination in the Third World: as women; as blind people; and as the inhabitants of a developing country. These facts are noteworthy when compared to the greater opportunities available to blind men in general. The handicaps endured by blind women reveal the need to find solutions which could ensure their access to education, rehabilitation and literacy. This is indeed a challenge for the Third World. Need we repeat that the 80% of the world's blind population who live there, or 42 million human beings, could be leading productive lives alongside those who see?

Young people constitute a special group as far as the problems associated with blindness are concerned. In general they suffer from the same problems affecting sighted young people living in the Third World: a lack of job opportunities; inadequate education; and economic dependence. Blindness only complicates the situation. In many countries the young too suffer from triple discrimination: as a blind person, as a young person and as the inhabitant of a developing contry. For young girls, being female adds a fourth dimension. Hence, it is essential to create programmes that seek solutions to such complex situations.

According to the data provided by the BFU, most readers of Braille in Latin America are young people. Since the ages of readers range from 15 to 30, a delay in entry to primary education can be noted. For a variety of reasons – learning problems, starting school late, or lack of opportunies at the end of schooling – 34% of readers were below the normal educational level for their age group.

Regarding the educational level of young blind readers in Latin America, it is worth noting that in 1985 although 44% were studying in secondary school, less than 7% were in higher education. Why this great disparity? The reasons concern economic problems, lack of proper guidance and scarcity of textbooks in Braille, but it is also important to note that blind students are denied access to certain university courses.

The outlook implies that blind students may have serious problems at the post-literacy level. If we compare their academic level with their chronological age, it would seem that difficulties appear after completing the secondary school studies. According to the opinion of Robert Scarpit, it could be that at this level young

blind people distance themselves from reading and gradually become illiterate again. This would explain the decrease in the percentage of readers over 40 years of age.

There would then seem to be a need to provide enough reading material and enough motivation to young blind people so that they do not stop reading. The post-literacy stage thus emerges as the major challenge for national and international organizations concerned with the blind and their integration. The production of easy-to-understand literature, and the publication of magazines dealing with young people's issues and which keep them informed and up to date would seem to be, among other things, solutions to this problem.

There is not doubt that, when young blind persons are properly educated and motivated, Braille represents the key to their cultural emancipation. Young people have stated what Braille has meant in their lives. These testimonies are presented in a book entitled *Braille and young people* printed by BFU at the time of the International Year of Youth in 1985. Among young people's opinions about what Braille meant for them the following were mentioned: 'independence'; 'a great friend of the blind'; 'an unexepected source of possibilities'; 'an instrument and a symbol'; etc.

Photo: Unesco

A young Tunisian girl learning to read in Braille.

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OBSTACLES PREVENTING THE USE OF BRAILLE

In 1981, Barry Hampshire wrote in his *Handbook* about three factors which work against Braille:
(a) External factors (referring to the availability of Braille material, the use of alternative methods, such as tape recordings, and learning difficulties).
(b) Factors directly related to Braille (referring to the large amount of space Braille occupies and the difficulties implied by using contractions and abbreviations in order to save space).
(c) Factors related to the readers (referring to the age, the residual vision and the overall capabilities of the readers).

The combination of these three factors with the many others that exist create obstacles for Braille use. For example, the lack of information on the part of the community and at times on the part of blind persons themselves, about what Braille is, how it is used and what function it fulfils, comprises a significant obstacle. Another serious obstacle is the lack of public awareness about Braille and the subsequent doors that are closed to the blind.

The use of Braille campaigns is helpful. Other measures should also be implemented to capture the interest of special groups of the population: women, young people, the elderly and labour unions. Generally, these groups defend their rights, among which are the rights to education and literacy. We can assume that these groups, in the spirit of solidarity or because they share the same problems, would co-operate in the dissemination of Braille so that their blind peers can be included in their plans.

But there are other, more subtle obstacles: those which are psychological. Archaic ideas lead to prejudices and pity, which only serve to paralyse the blind person's new level of awareness by passing him off as a beggar and a victim of divine punishment.

Many parents never accept their children's blindness. They manifest this unwillingness, not against their blind child, but against the instruments that identify him as such: the white cane and Braille literature. A father is often shocked to see his child reading with his fingers, and this may cause him to reject and even destroy his child's Braille material.

Acceptance is a slow but crucially important process. Parents can be the best allies of education and literacy. Everthing is possible with their support. Without this support, the situation only worsens, converting the blind child or youth into a victim of his or her parent's shock.

In this situation, publishers of Braille works must use their imagination to attract not only the child reader but the parents as well. With this in mind, diverse projects have been developed in the last fifteen years to make the child's Braille book attractive to both children and parents. But the problem is not easily resolved. More resources are needed for publishing and for solving the economic problems faced by educators who abandon special students in search of more financial security. No one can deny that Braille is the key to literacy for the blind, but there are still socio-economic and psychological obstacles in the way.

Virtually all industrialized countries now have computerized Braille reproduction systems, whereas in the Third World, very few countries have the technological and financial capabilities to aid in the independence of the blind. If today there exists an extremely high level of illiterate blind persons living in the Third World, it is not because there is no system which allows them to read or write, nor is it because there are no technological resources for producing quality material in adequate quantities. It is not a question of lesser intelligence or lack of skill among the blind in developing countries. Illiteracy among blind persons is avoidable, both in the North and in the South.

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The International Bureau of Education acknowledges with grateful thanks this contribution by Enrique Elissade to the cause of Literacy. Since becoming blind at the age of 13, Enrique Elissade has led an extremely active career as an author and editor in the cause of the blind. In 1978 he co-founded the Braille Foundation of Uruguay, over which he has presided ever since. He was a founding member of the World Blind Union and in 1987 received recognition by the United Nations for his work in favour of blind persons.

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